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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/486,480	10/25/2000	James A. Spudich	18557A-00021	9741

7590 08/16/2002

Medlen & Carroll LLP
101 Howard Street Suite 350
San Francisco, CA 94105

EXAMINER

DEVI, SARVAMANGALA J N

ART UNIT	PAPER NUMBER
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1645

DATE MAILED: 08/16/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/486,480

Applicant(s)

Spudich et al.

Examiner

S. Devi, Ph.D.

Art Unit

1645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE one MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jul 23, 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 ~~is~~/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claims 1-55 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Geke et al.; Key et al.; Kallury et al.

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Lack of Unity of Invention(s)

- 1) Claims 1-55 are under prosecution.
- 2) **Please Note:** In an effort to enhance communication with our customers and reduce processing time, Group 1640 is running a Fax Response Pilot for Written Restriction Requirements. A dedicated Fax machine is in place to receive your responses. The Fax number is 703-308-4315. A Fax cover sheet is attached to this Office Action for your convenience. We encourage your participation in this Pilot program. If you have any questions or suggestions please contact Paula Hassle, Ph.D., Supervisory Patent Examiner at Paula.Hutzell@uspto.gov or 703-308-4310. Thank you in advance for allowing us to enhance our customer service. Please limit the use of this dedicated Fax number to responses to Written Restrictions.
- 3) The instant invention lacks unity under PCT Rule 13.1 and 13.2:
 - I. Claims 14-20, drawn to a functionalized layered silicate contacted with an arginine tag, classified in class 435, subclass 288.6.
 - II. Claims 51-55, drawn to a vessel device comprising a layered silicate, classified in class 210, subclass 198.2
 - III. Claims 28-33, drawn to a layered silicate surface bearing oriented proteins attached to arginine-tags, classified in class 436, subclass 527.
 - IV. Claims 1-13, drawn to a method of attaching a moiety to a layered silicate surface by covalently attaching the moiety to an arginine tag, classified in class 435, subclass 174
 - V. Claims 21-27, drawn to a method of orienting an arginine-attached polypeptide on a layered silicate surface, classified in class 530, subclass 810
 - VI. Claims 34-50, drawn to a method of purifying an arginine-tagged target molecule by contacting with a layered silicate surface, classified in class 530, subclass 413
- 4) Inventions I to VI lack unity of invention due to the absence of a special technical feature. Rule 13 PCT stipulates that the international application shall relate to one invention only or to a group so linked so as to form a single general inventive concept. Where a group of inventions is claimed in one and the same international application, the requirement of unity of invention shall

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be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding "special technical features", i.e., technical features that define a novel and inventive contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The special technical feature common to the inventions in the instant application is the layered silicate with or without an arginine molecule. However, such a material was already known in the prior art. For instance, Geke *et al.* (*J. Colloid Interface Sci.* 189/2: 283-287, 1997), or Kaye *et al.* (GB2306484) teach a layered silicate (see abstract). Kallury *et al.* (US 5,405,766) teach a silicate surface containing biologically active proteins covalently attached to the silicate surface via arginine (see paragraph bridging columns 2 and 3; abstract; column 7, lines 34-41; and column 14, first paragraph). Thus, the special technical feature of the instant invention is suggested by the combined teachings of the above-cited prior art. Therefore, although a product of the invention and the first method of using and making the product is a permitted combination under PCT Rule 13.2, in the instant case, the special technical feature is not a unifying feature in the instant application. It is further noted that, technically, the absence of a special technical feature would permit the separation of the method of using and making the product from the product itself.


5) Applicants are advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 C.F.R. 1.143).

6) Any inquiry concerning this communication or earlier communication(s) from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (703) 308-9347. A message may be left on the Examiner's voice mail service. The Examiner can normally be reached on Monday to Friday from 7.15 a.m to 4.15 p.m. except one day each bi-week which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lynette Smith, can be reached on (703) 308-3909.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

August, 2002


S. DEVI, PH.D.
PRIMARY EXAMINER



RESTRICTION ELECTION FACSIMILE TRANSMISSION

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Ion exchange of cation-terminated poly(ethylene oxide) chains on mica surfaces

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The adsorption of poly(ethylene oxide) on mica is promoted by cationic end groups. These cation-terminated polymers adsorb on mica surfaces via ion exchange, resulting in a film of polymer attached to the layered silicate. The experimental ion exchange isotherms resemble those for small cations, but with a much reduced surface-exchange capacity for the polymeric cations. The number of adsorbed chains decreases with increasing chain length while the mass adsorbed increases.